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PATENT

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

Pang

Application No: 09/607,592

Filed: June 30, 2000

For: METHOD AND APPARATUS FOR  
GRAPHICAL DEVICE MANAGEMENT  
USING A VIRTUAL CONSOLE

Examiner: T. Basom

Art Unit: 2173

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~~OFFICIAL~~PROPOSED CLAIM AMENDMENTS TO BE DISCUSSED DURING TELEPHONE  
INTERVIEW ON SEPT. 2, 2003 (2:00 PM EST)

1. (Currently Amended) A method for developing a graphical device management application comprising:
  - creating a graphical component with a graphical programming language;
  - associating the graphical component with a device configuration command;
  - linking the associated graphical component with a console user interface (CUI) and a configuration kernel (CK), the CUI and CK having code to configure a remote device according to the device configuration command; and
  - building a graphical user interface (GUI) from the linked graphical component, the CUI and the CK, to reflect a state of the CK as communicated by the CUI, wherein the CUI runs under the GUI, rather than on an actual device.

2. (Original) The method of claim 1 wherein associating the graphical component with a device configuration command is performed using a macro.
3. (Original) The method of claim 1 wherein creating a graphical component comprises adding a control to a dialog.
4. (Original) The method of claim 1 wherein building a GUI comprises compiling the linked graphical component, the CUI and the CK on a general purpose computer system
5. (Original) The method of claim 1 wherein building a GUI comprises interpreting the linked graphical component, the CUI and the CK on a general purpose computer system.
6. (Currently Amended) An apparatus comprising:
  - a configuration kernal (CK) having code to configure a device from a configuration;
  - a console user interface (CUI) having code to update the configuration;
  - a graphical user interface (GUI) having code to receive an update to the configuration in response to a user action; and
  - a communications mechanism to communicate the received update from the GUI to the CUI, communicate the updated configuration from the CUI to the CK, and communicate the updated configuration from the CK to the CUI and from the CUI to the

GUI, in order to reflect a state of the CK as communicated by the CUI, wherein the CUI runs under the GUI, rather than on an actual device.

7. (Previously Presented) The apparatus of claim 6 wherein the code to configure the device comprises at least one of a variable, a data structure and a function.

8. (Previously Presented) The apparatus of claim 6 wherein the code to configure the device resides in a library linked to the CUI and the GUI.

9. (Previously Presented) The apparatus of claim 6 wherein the code to update the configuration comprises at least one command of a command set.

10. (Previously Presented) The apparatus of claim 6 wherein the code to update the configuration resides in a library linked to the CUI and the GUI.

11. (Previously Presented) The apparatus of claim 6 wherein the code to configure a device is a reusable firmware, the reusable firmware having been originally coded for operation on the device.

12. (Previously Presented) The apparatus of claim 6 wherein the code to update the configuration is a reusable firmware, the reusable firmware having been originally coded for operation on the device.

13. (Currently Amended) A computer-readable medium comprising computer-executable instructions for performing:

- creating a graphical component with a graphical programming language;
- associating the graphical component with a device configuration command;
- linking the associated graphical component with a console user interface (CUI) and a configuration kernel (CK), the CUI and CK having code to configure a remote device according to the device configuration command; and
- building a graphical user interface (GUI) from the linked graphical component, the CUI and the CK, to reflect a state of the CK as communicated by the CUI, wherein the CUI runs under the GUI, rather than on an actual device.

14. (Original) The computer-readable medium of claim 13 further comprising computer-executable instructions for performing associating the graphical component with a device configuration command using a macro.

15. (Original) The computer-readable medium of claim 13 further comprising computer-executable instructions for performing compiling the linked graphical component, the CUI and the CK on a general purpose computer system.

16. (Original) The computer-readable medium of claim 13 further comprising computer-executable instructions for performing interpreting the linked graphical component, the CUI and the CK on a general purpose computer system.

17. (Currently Amended) A method of configuring a networked device using a workstation comprising:

identifying a registered command that matches a configuration command, wherein the configuration command describes a state of a configuration kernel for the networked device, and the registered command identifies a graphical component associated with the configuration command;

initializing, as a result of identifying the match, the graphical component to a corresponding state of the configuration kernel;

displaying, on a window of a remote workstation, the initialized graphical component;

receiving an update to the configuration command from a user action on the associated graphical component;

passing the updated configuration command to a virtual-console console user interface that runs under a graphical user interface, rather than on an actual device; and

updating by the virtual-console console user interface the state of the configuration kernel with the passed updated configuration command.

18. (Previously Presented) The method of claim 17 further comprising:

determining whether the updated configuration command is interdependent with a second configuration command, and if so refreshing the graphical component associated with the second configuration command to reflect the updated state of the configuration kernel.

19. (Original) The method of claim 17 further comprising:

uploading the updated state of the configuration kernel to the remote networked device.

20. (Previously Presented) The method of claim 1, wherein building the GUI from the linked graphical component, the CUI and the CK, to reflect the state of the CK as communicated by the CUI, comprises:

interrogating the CUI for a list of configuration commands that describe the state of the CK;

comparing a configuration command to a register of commands that identifies an associated graphical component for each configuration command, wherein the configuration command describes the state of the CK for the remote device, and the registered command identifies a graphical component associated with the configuration command;

identifying the registered command that matches the configuration command; and

initializing, as a result of identifying the match, the graphical component to a corresponding state of the CK.

21. (Previously Presented) The computer-readable medium of claim 13, wherein the computer-executable instructions for performing building the GUI from the linked graphical component, the CUI and the CK, to reflect the state of the CK as communicated by the CUI, comprise computer-executable instructions for performing:

interrogating the CUI for a list of configuration commands that describe the state of the CK;

comparing a configuration command to a register of commands that identifies an associated graphical component for each configuration command, wherein the configuration command describes the state of the CK for the remote device, and the registered command identifies a graphical component associated with the configuration command;

identifying the registered command that matches the configuration command; and

initializing, as a result of identifying the match, the graphical component to a corresponding state of the CK.

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